

Claims

1. Data communication device (14) by means of which different signals can be exchanged with another data communication device (15) using one and the same line (12) and utilizing different frequency ranges (5, 6), with said data communication device (14) having a first signal exchange device (2a) that is activated if signals are to be exchanged with the other data communication device (15) utilizing a first frequency range (5), and a second signal exchange device (2b) that is used in order to exchange signals with the other data communication device (15) utilizing a second frequency range (6)

characterized in that the first signal exchange device (2a) will be activated even if signals are to be exchanged with the other data communication device (15) using the second signal exchange device (2b) and utilizing the second frequency range (6) in order to avoid changes in line impedance that otherwise occur when the first signal exchange device (2a) is activated or deactivated and that disturb the signal exchange via the second frequency range (6).

2. Data communication device (14), in particular a data communication device (14) according to Claim 1, by means of which different signals can be exchanged with another data communication device (15) using one and the same line (12) and utilizing different frequency ranges (5, 6), with said data communication device (14) having a first signal exchange device (2a) that is activated if signals are to be exchanged with the other data communication device (15) utilizing a first frequency range (5), and a second signal exchange device (2b) that is used in order to exchange signals with the other data communication device (15) utilizing a second frequency range (6)

characterized in that the data communication device (14) has a determining device (72) by means of which it is determined whether changes in line impedance occurring when the first signal exchange device (2a) is activated or deactivated will lead to bit errors or an excessively high bit error

rate during the signal exchange carried out using the second signal exchange device (2b) and utilizing the second frequency range (6).

3. Data communication device (14) according to Claim 2 in which,
5 when it is determined that changes in line impedance occurring when the first signal exchange device (2a) is activated or deactivated will lead to bit errors or an excessively high bit error rate, the first signal exchange device (2a) will be activated even if signals are to be exchanged with the other data communication device (15)
10 using the second signal exchange device (2b) and utilizing the second frequency range (6), and the first signal exchange device (2a) will otherwise only be activated if signals are to be exchanged with the other data communication device (15) using the first signal exchange device (2a) and utilizing the first frequency range (5).

15 4. Data communication device (14) according to one of the preceding Claims in which not the entire first signal exchange device (2a) but, instead, only a part thereof is activated in order to avoid changes in line impedance that occur when the first signal exchange
20 device (2a) is activated or deactivated and that disturb the signal exchange via the second frequency range (6).

5. Data communication device (14) according to one of the preceding Claims in which for exchanging data using the second frequency range
25 (6a) and for exchanging data using a third frequency range (6b) each of said frequency ranges (6a, 6b) is allocated a specific number of bits or bit sequences (a, b, c, d).

6. Data communication device (14) according to Claim 5 in which,
30 when it is determined that changes in line impedance occurring when the first signal exchange device (2a) is activated or deactivated will lead to bit errors or an excessively high bit error rate, the allocation of bits or bit sequences (a, b, c, d) to the second or third frequency range (6a, 6b) will be changed.

7. Data communication device (14) according to Claim 5 or 6 in which the transmission signals used for exchanging data are DSL signals.

5 8. Data communication device (14) according to one of the preceding Claims in which the signals sent using the first frequency range (5) are voice signals.

9. Data communication method for use, in particular, by a data communication device (14) according to one of Claims 1 to 8 by means of which a first signal exchange device (2a) is activated if signals are to be exchanged via a line (12) using a first frequency range (5)

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15 the method has the step:

- Determining whether changes in line impedance occurring when the first signal exchange device (2a) is activated or deactivated will lead to bit errors or an excessively high bit error rate during a signal exchange carried out via the same line (12) using a second signal exchange device (2b) and utilizing a second frequency range (6).

10. Data communication method for use, in particular, by a data communication device (14) according to one of Claims 1 to 8 by means of which a first signal exchange device (2a) is activated if signals are to be exchanged via a line (12) using a first frequency range (5)

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the method has the step:

30 - Activating the first signal exchange device (2a) even if signals are to be exchanged via the line (12) using a second signal exchange device (2b) and utilizing a second frequency range (6) in order to avoid changes in line impedance that otherwise occur when the first signal exchange device (2a) is activated or deactivated and that
35 disturb the signal exchange via the second frequency range (6).